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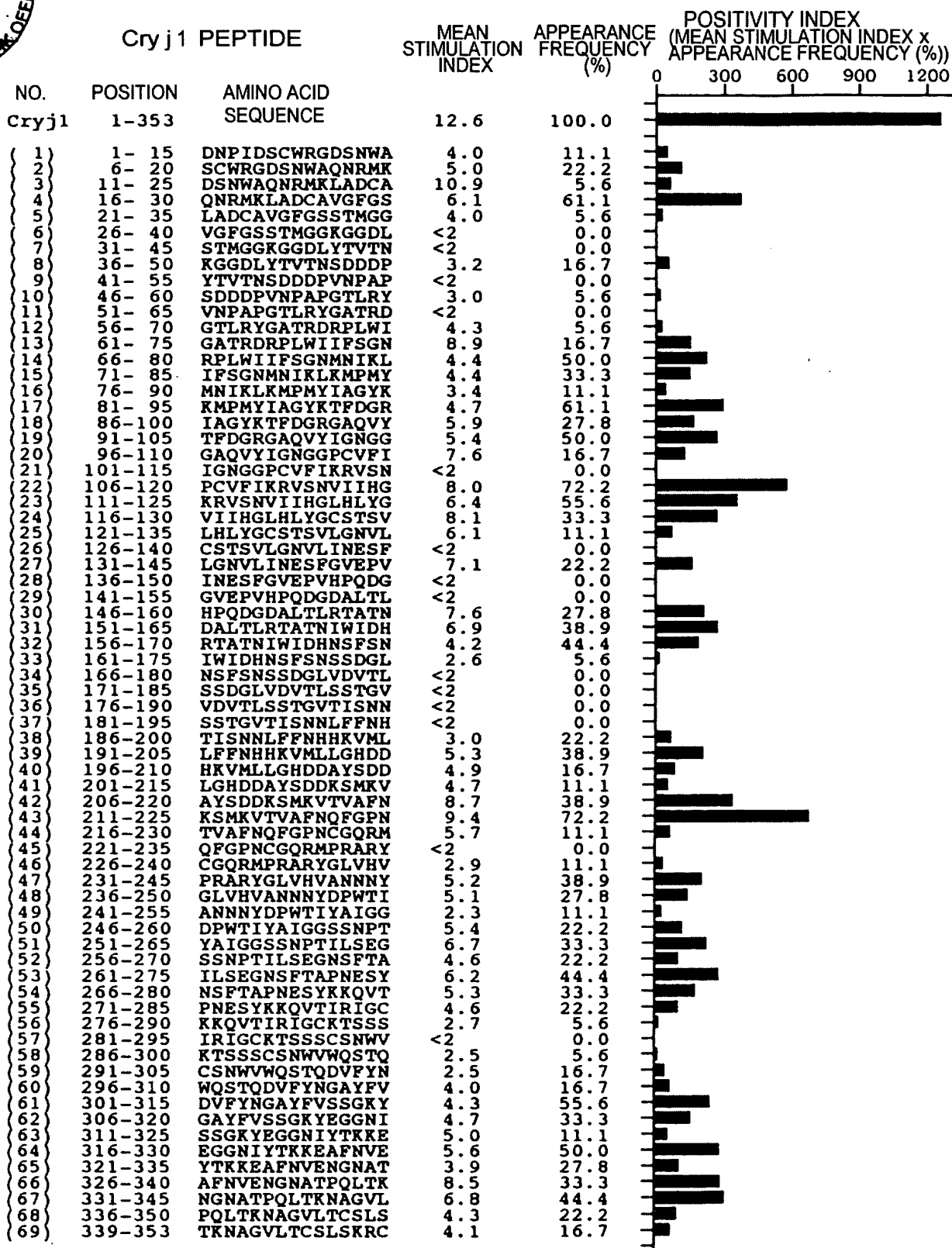


FIG. 1



Cry j 2 PEPTIDE

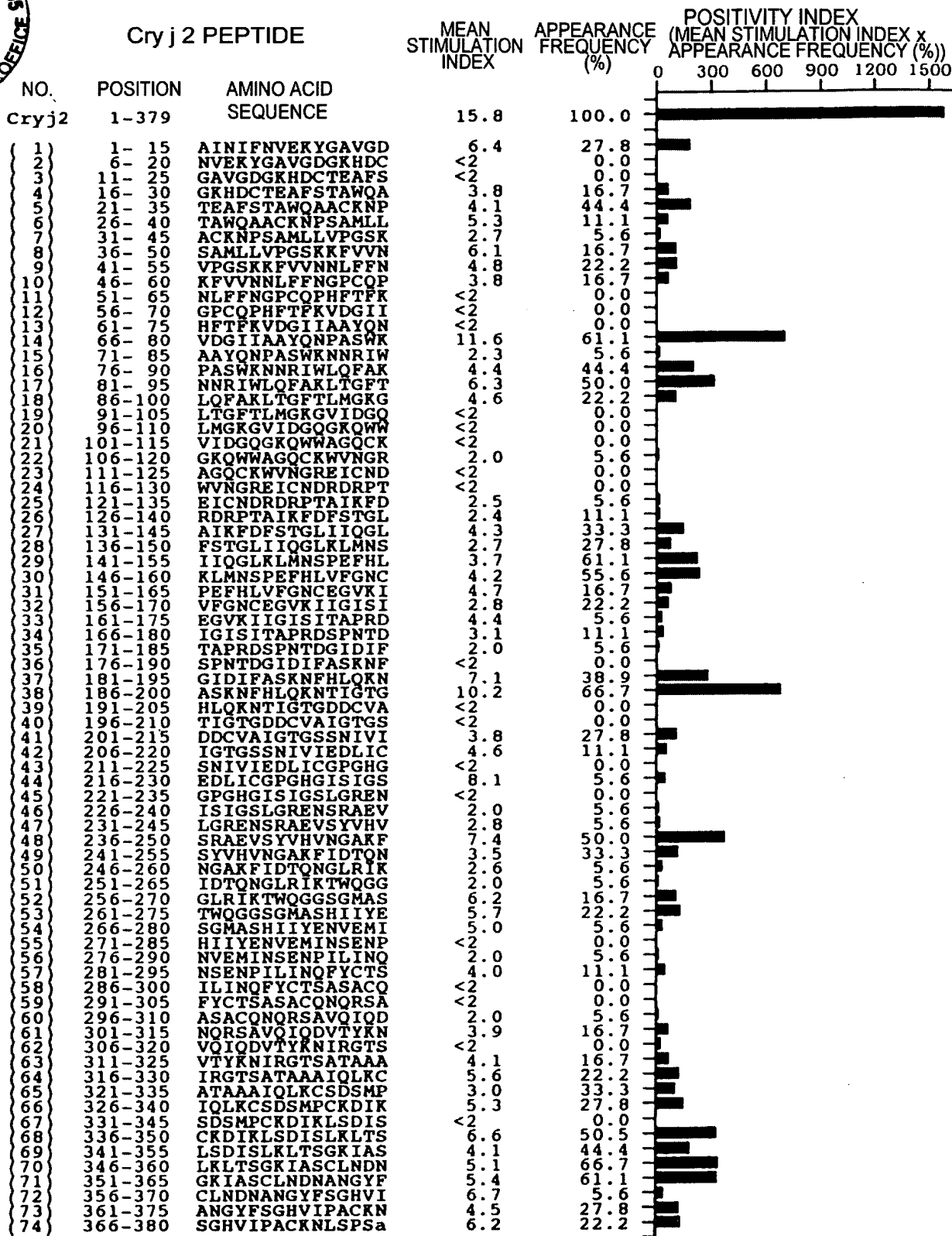
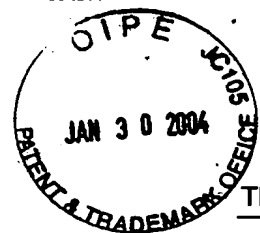


FIG. 2

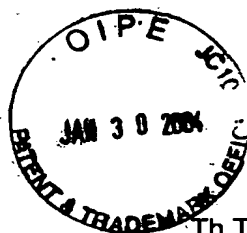


Th TYPE OF T CELL CLONE CAPABLE OF RECOGNIZING Cry j 1

T CELL CLONE	EPITOPE SITE		RESTRICTION MOLECULE	LYMPHOKINE PRODUCTION (pg/ml)			Th* TYPE
	NO.	POSITION		IL-2	IFN $\gamma$	IL-4	
PJ4-6	4	16- 30	DQA1*0102 DQB1*0602	<31	1500	334	Th0
PB8-1	4	16- 30	"	<31	<31	814	Th2
PB9-37	13	61- 75	DPA1*0101-DPB1*0501	<31	<31	7760	Th2
PB10-24	13	61- 75	"	39	151	4500	Th2
PJ1-27	19	91-105	DQ	32	1220	224	Th0
PB3-27	22	106-120	DRB5*0101	250	332	21000	Th2
PB8-2	22	106-120	"	190	2110	5709	Th0
PB8-3	22	106-120	"	<31	1270	10100	Th0
PB9-39	22	106-120	"	48	51	5120	Th2
PB10-18	22	106-120	"	410	46	7840	Th2
PJ4-29	22	106-120	"	4680	14200	6610	Th0
PJ7-9	22	106-120	"	1370	1040	12200	Th2
PJ5-6	30	145-160	DQA1*0102-DQB1*0602	1500	1170	5920	Th0
PJ5-9	30	145-160	"	1720	825	266	Th0
PB11-21	31	151-165	DRB1*0901	4190	>20000	4510	Th0
PB11-24	31	151-165	"	670	11700	1950	Th0
PB6-37	31	151-165	"	<31	<31	49	Th2
PB1-8	39	191-205	DQA1*0102-DQB1*0602	820	188	1760	Th0
PB9-34	39	191-205	DRB1*0901 OR DRB4*0101	<31	86	1680	Th2
PB2-14	43	211-225	DPA1*0101-DPB1*0501	<31	376	2320	Th0
PB7-2	43	211-225	"	84	2740	2080	Th0
PB8-32	43	211-225	"	<31	4870	1840	Th0
PB8-34	43	211-225	"	78	14800	3040	Th0
PB11-23	43	211-225	"	<31	3990	1260	Th0
PB11-26	43	211-225	"	32	1100	6520	Th0
PB4-20	43	211-225	"	<31	<31	133	Th2
PB10-4	43	211-225	"	<31	<31	4170	Th2
PB8-4	51	251-265	DQA1*0102-DQB1*0602	44	36	4050	Th2
PJ4-20	66	326-340	DQA1*0102-DQB1*0602	560	3080	<32	Th1

\* IL-4/IFN- $\gamma$  > 10 AND IFN- $\gamma$ /IL-4 > 10 ARE DEFINED TO BE Th2 AND Th1, RESPECTIVELY, AND Th0 MEANS INBETWEEN.

FIG. 3



Th TYPE OF T CELL CLONE CAPABLE OF RECOGNIZING Cry j 2

T CELL CLONE	EPITOPE SITE		RESTRICTION MOLECULE	LYMPHOKINE PRODUCTION (pg/ml)			Th* TYPE
	NO.	POSITION		IL-2	IFN $\gamma$	IL-4	
PB5-29	4	16- 30	DRB1*0901 OR DRB4*0101	<31	503	97	Th0
PB11-40	4	16- 30	"	<31	<31	50	Th2
PB14-4	4	16- 30	"	<31	<31	<16	Thp
PB12-33	8	36- 50	DRB1*1501	<31	>8000	<16	Th1
PR2-25	8	36- 50	"	47	<31	977	Th2
PR5-40	8	36- 50	"	1150	1330	355	Th0
PB3-32	14	66- 80	DRB5*0101	<31	<31	323	Th2
PB4-21	14	66- 80	"	<31	109	239	Th0
PB4-22	14	66- 80	"	<31	483	158	Th0
PC1-8	14	66- 80	"	<31	2710	32	Th1
PR4-20	14	66- 80	"	<31	312	338	Th0
PR3-21	14	66- 80	"	<31	<31	338	Th2
PB13-18	17	76- 90	DPA1*0101-DPB1*0501	<31	3320	231	Th1
PB11-32	17	76- 90	"	138	60	2090	Th2
PR1-20	31	151-165	DRB1*0901	<31	<31	18	Th2
PR4-39	31	151-165	"	<31	<31	<16	Thp
PB14-5	37	181-195	DPA1*0101-DPB1*0201	87	126	469	Th0
PB14-13	37	181-195	"	<31	59	2440	Th2
PB14-34	38	186-200	DRB4*0101	186	420	93	Th0
PC3-40	38	186-200	"	<31	<31	379	Th2
PB5-3	48	236-250	DRB1*1501 OR DRB5*0101	2570	>8000	525	Th1
PR2-34	65	321-335	DRB1*0901	57	1990	464	Th0
PR3-30	66	326-340	DQA1*0102-DQB1*0602	<31	106	<80	Th1
PR5-18	66	326-340	"	<31	<31	<16	Thp
PC1-13	68	336-350	DPA1*0202-DPB1*0501	<31	<31	<16	Thp
PB12-8	69	341-355	DQA1*0102-DQB1*0602	<31	3210	<16	Th1
PR5-12	69	341-355	"	<31	<31	2528	Th2
PR2-31	69	341-355	"	<31	<31	332	Th2
PB14-19	70	346-360	"	<31	3730	<16	Th1
PB13-38	70	346-360	"	<31	2020	<16	Th1

\* IL-4/IFN- $\gamma$  > 10 AND IFN- $\gamma$ /IL-4 > 10 ARE DEFINED TO BE Th2 AND Th1, RESPECTIVELY, Th0 MEANS INBETWEEN, AND Thp MEANS NOT SHOWING THE PRODUCTION OF LYMPHOKINE.

FIG. 4

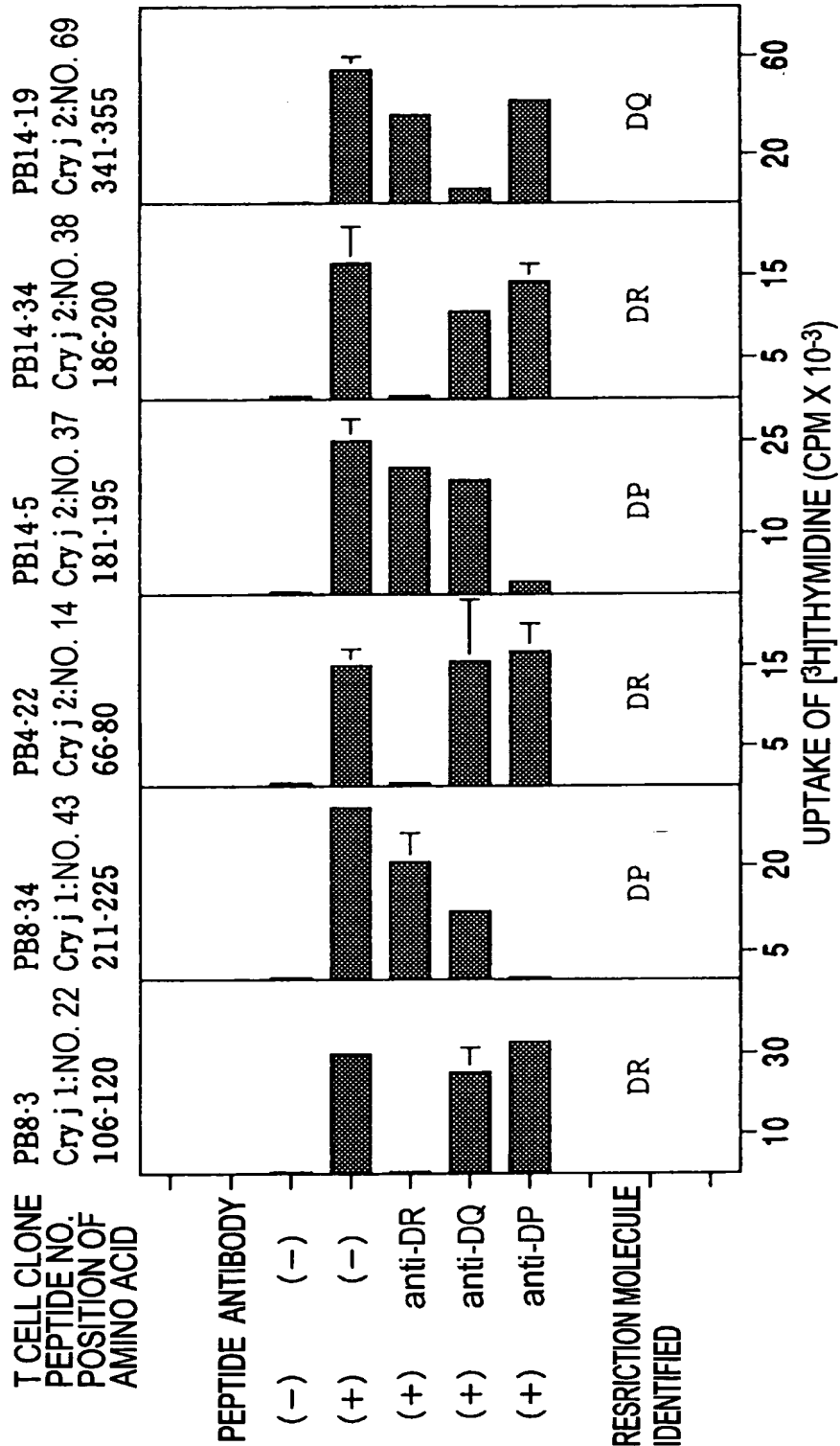


FIG. 5

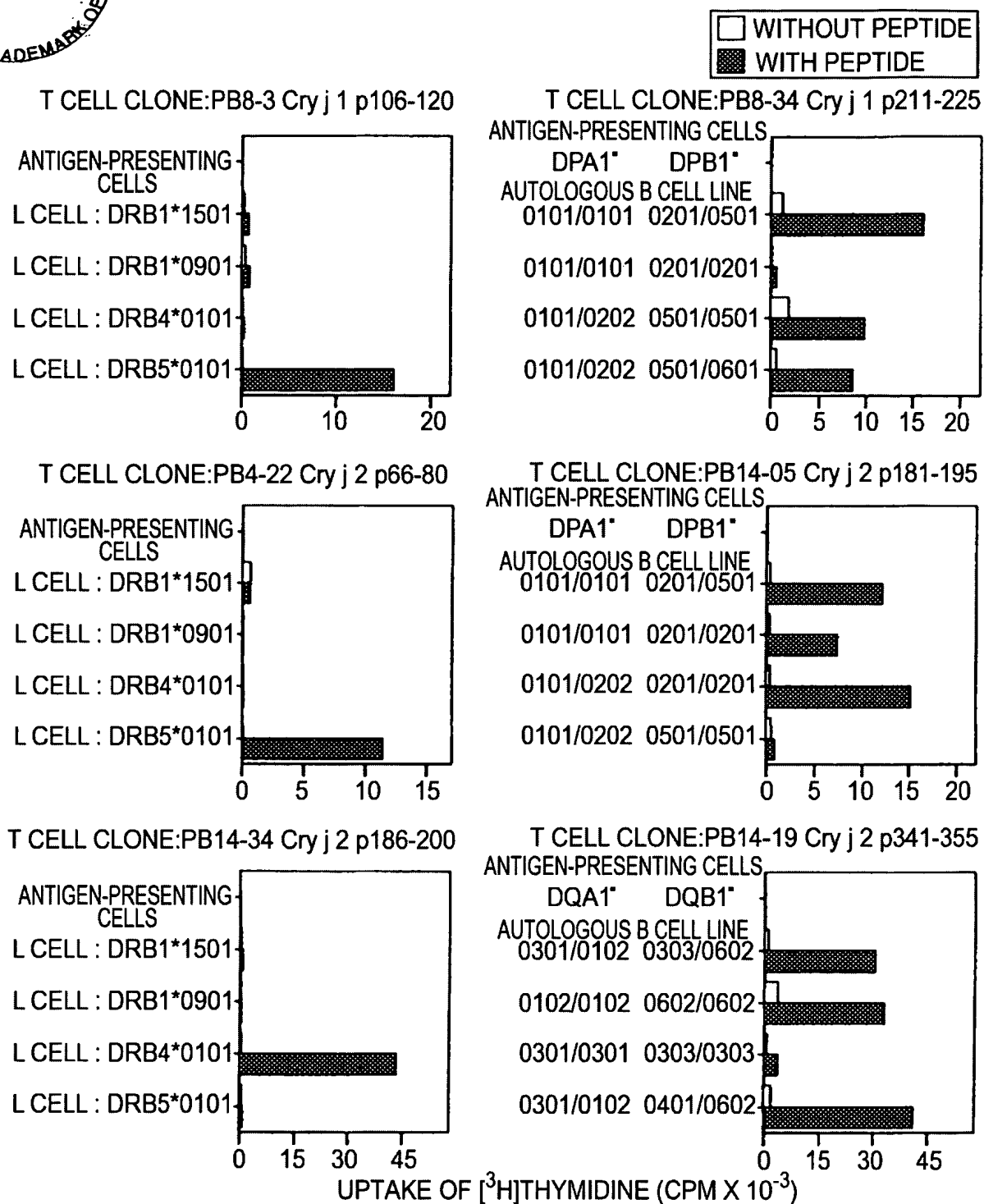
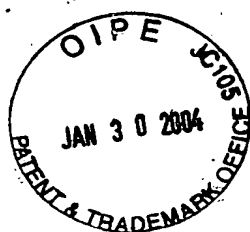
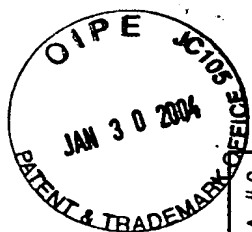


FIG. 6



a Lys Ser Met Lys Val Thr Val Ala Phe Asn Gln Phe Gly Pro Asn  
b Pro Cys Val Phe Ile Lys Arg Val Ser Asn Val Ile Ile His Gly  
c Val Asp Gly Ile Ile Ala Ala Tyr Gln Asn Pro Ala Ser Trp Lys  
d Gly Ile Asp Ile Phe Ala Ser Lys Asn Phe His Leu Gln Lys Asn Thr Ile  
Gly Thr Gly  
e Leu Lys Leu Thr Ser Gly Lys Ile Ala Ser Cys Leu Asn Asp Asn Ala Asn  
Gly Tyr Phe

FIG. 7



REACTIVITY OF PEPTIDE COMPOSITIONS (#1 - #6) WITH HUMAN IgE

SAMPLE NO. (SERA)	BLANK	CEDAR POLLEN- EXTRACTED ANTIGEN	C.A. #1	C.A. #2	C.A. #3	C.A. #4	C.A. #5	C.A. #6
1	3	2105	5	4	3	4	4	4
2	3	1133	4	4	4	4	4	4
3	3	1126	3	3	3	4	4	3
4	3	1095	4	3	3	3	3	3
5	3	1047	3	3	3	3	3	3
6	3	1003	3	4	3	3	3	3
7	4	710	4	4	4	4	4	4
8	3	521	3	3	3	3	3	3
9	3	314	3	3	4	3	4	4
10	3	298	3	3	4	4	4	3
11	3	279	3	3	3	3	3	3
12	3	253	3	3	3	3	3	3
13	3	239	3	3	3	3	3	3
14	3	235	4	4	3	3	3	3
15	3	233	3	3	3	3	4	3
16	3	226	4	4	3	3	3	3
17	3	190	3	3	3	3	3	3
18	3	162	4	4	4	4	4	4
19	3	123	3	3	3	3	3	3
20	3	106	3	3	3	3	4	3
21	4	45	3	3	3	3	3	4
22	3	14	3	3	3	3	3	3
23	3	13	3	3	3	3	3	3
24	3	11	3	3	3	3	3	3
25	3	5	4	3	3	3	4	4
26	3	4	4	4	3	4	4	3
27	3	3	3	3	3	3	3	3
28	3	3	3	3	3	3	3	3
29	3	3	3	4	3	3	3	3
RABBIT anti-PEPTIDE IgG	112	230	3754	3829	3769	3716	3841	3798

FIG. 8

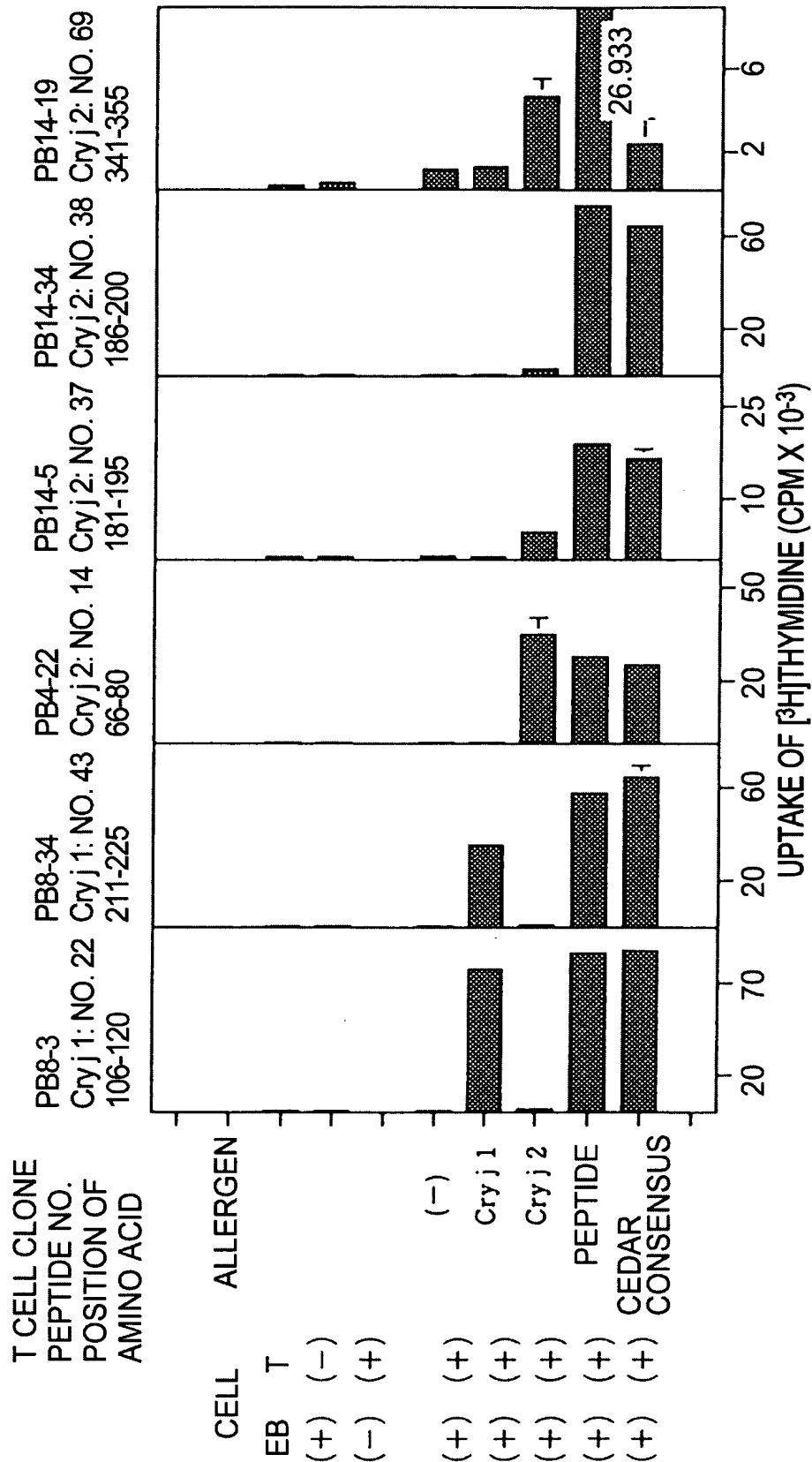


FIG. 9

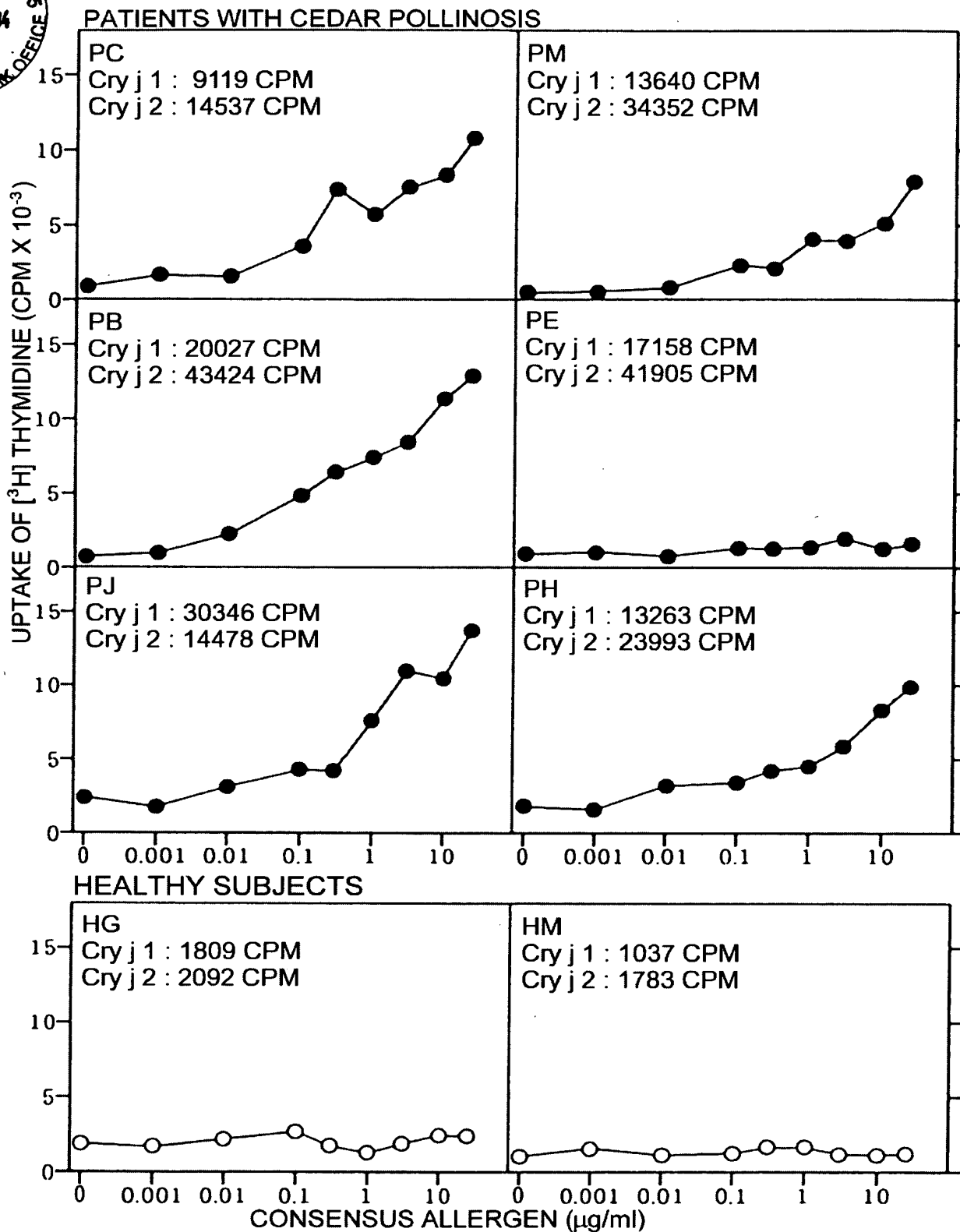
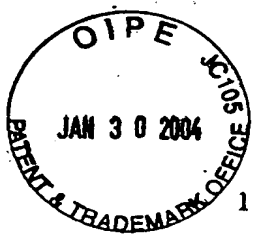


FIG. 10

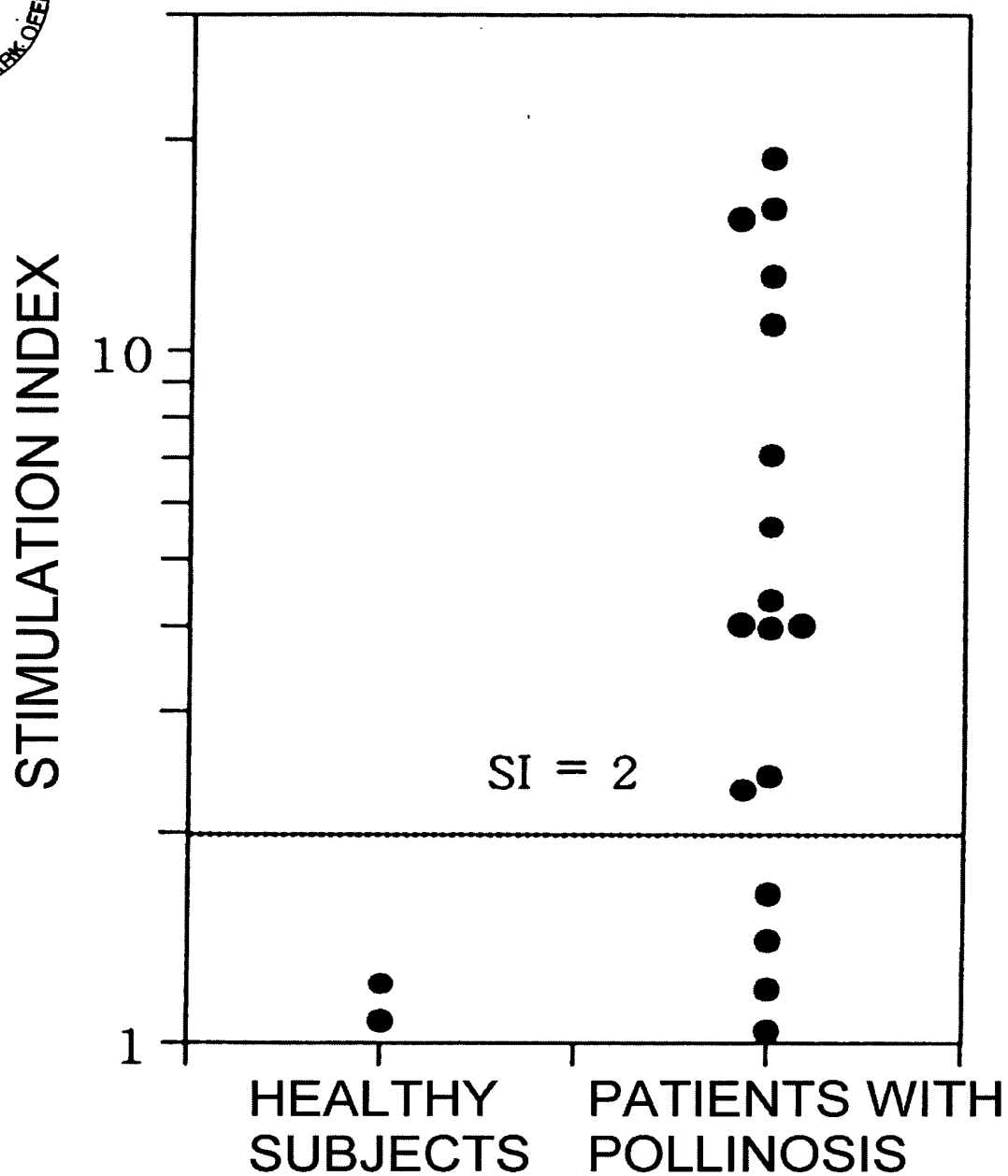


FIG. 11

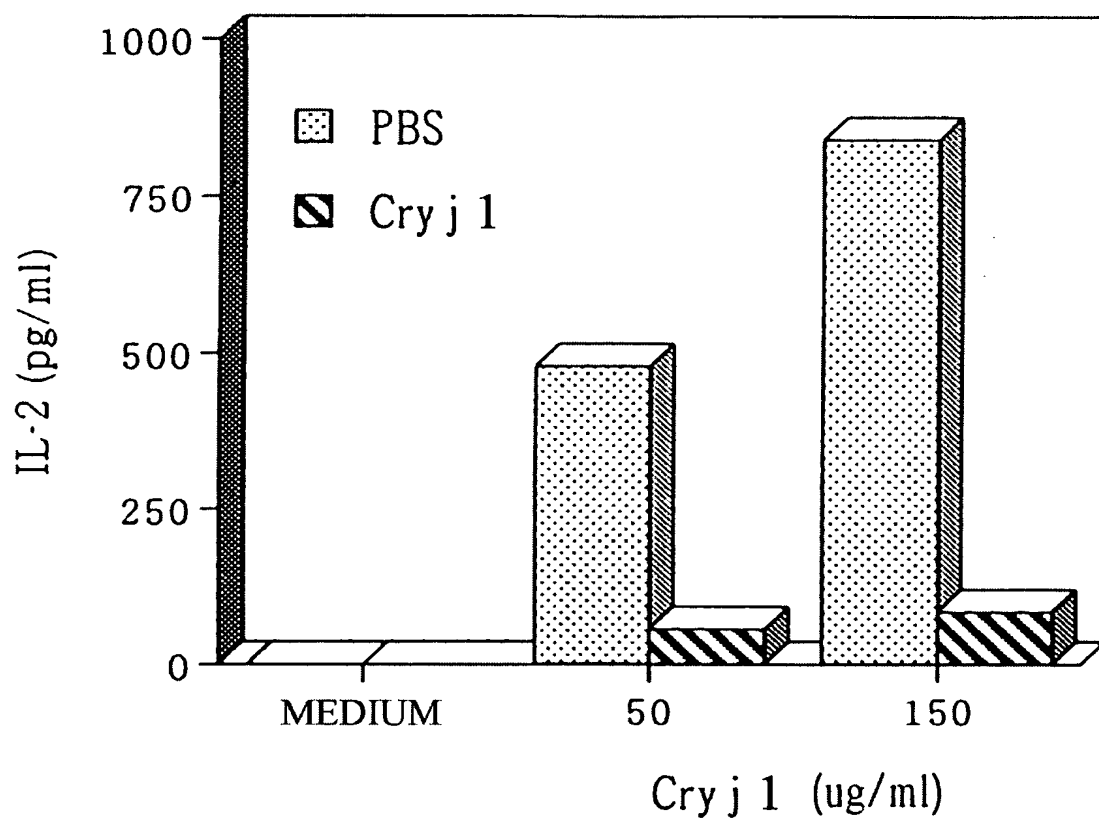


FIG. 12

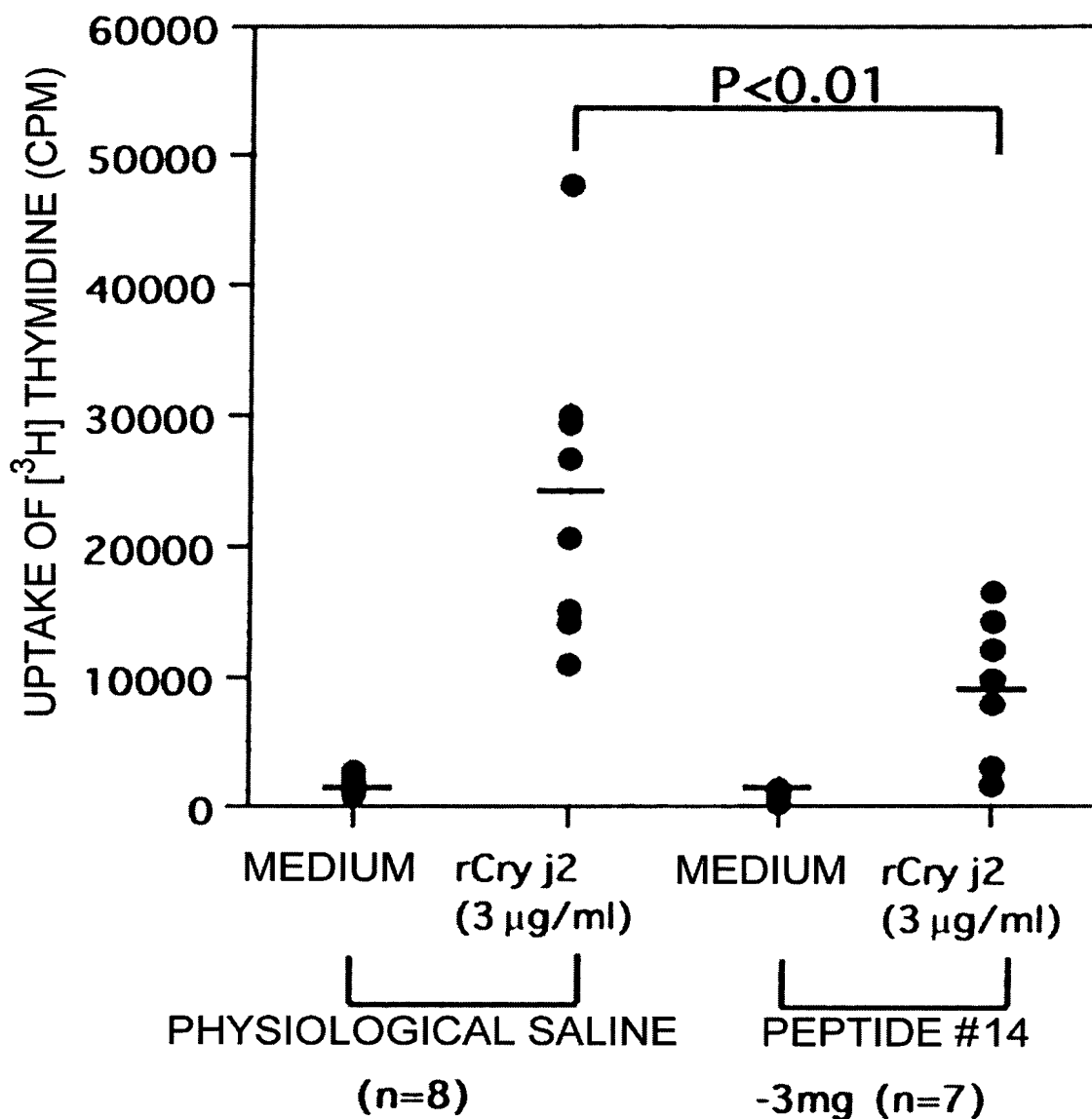


FIG. 13

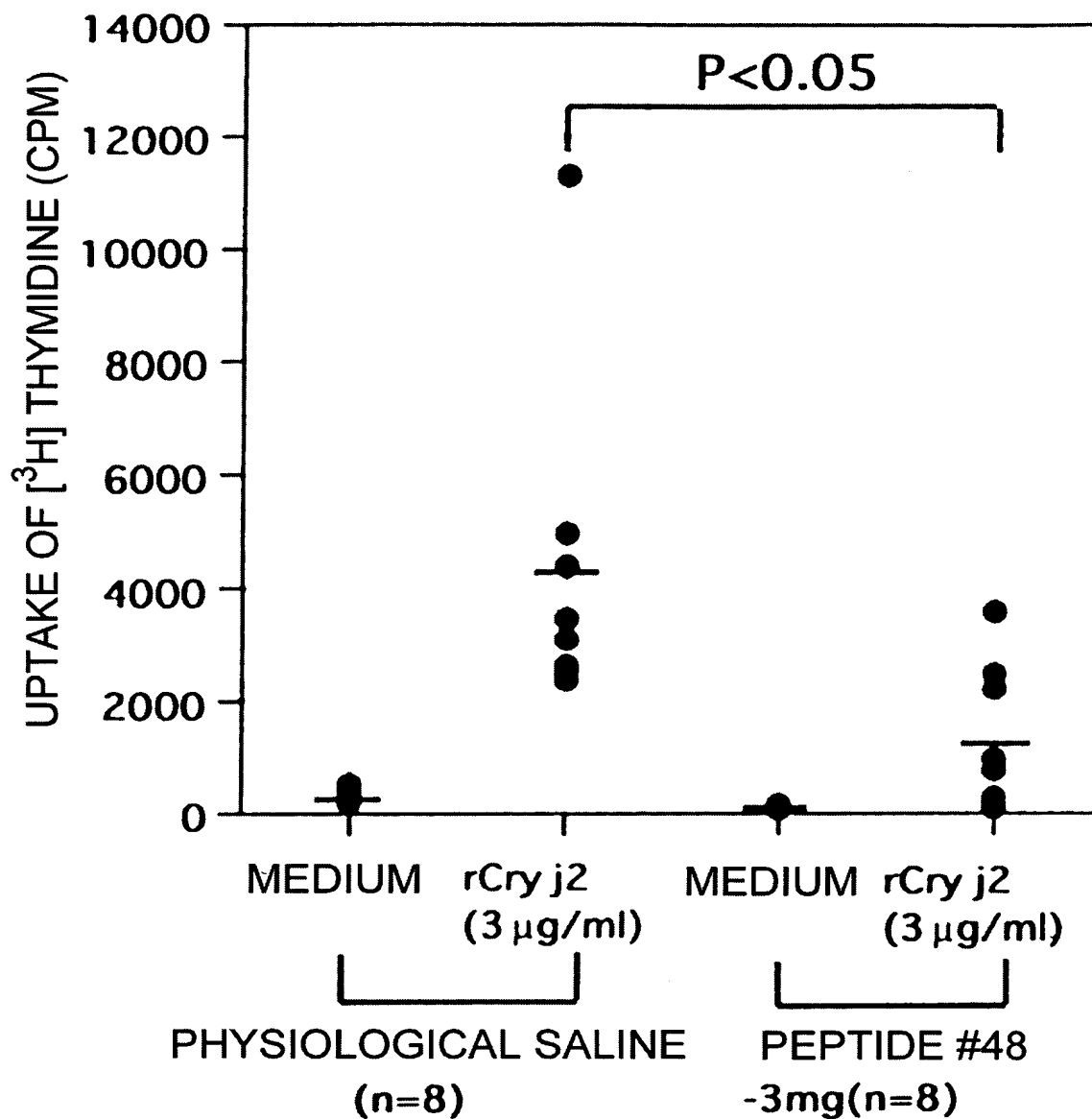


FIG. 14



T CELL CLONE

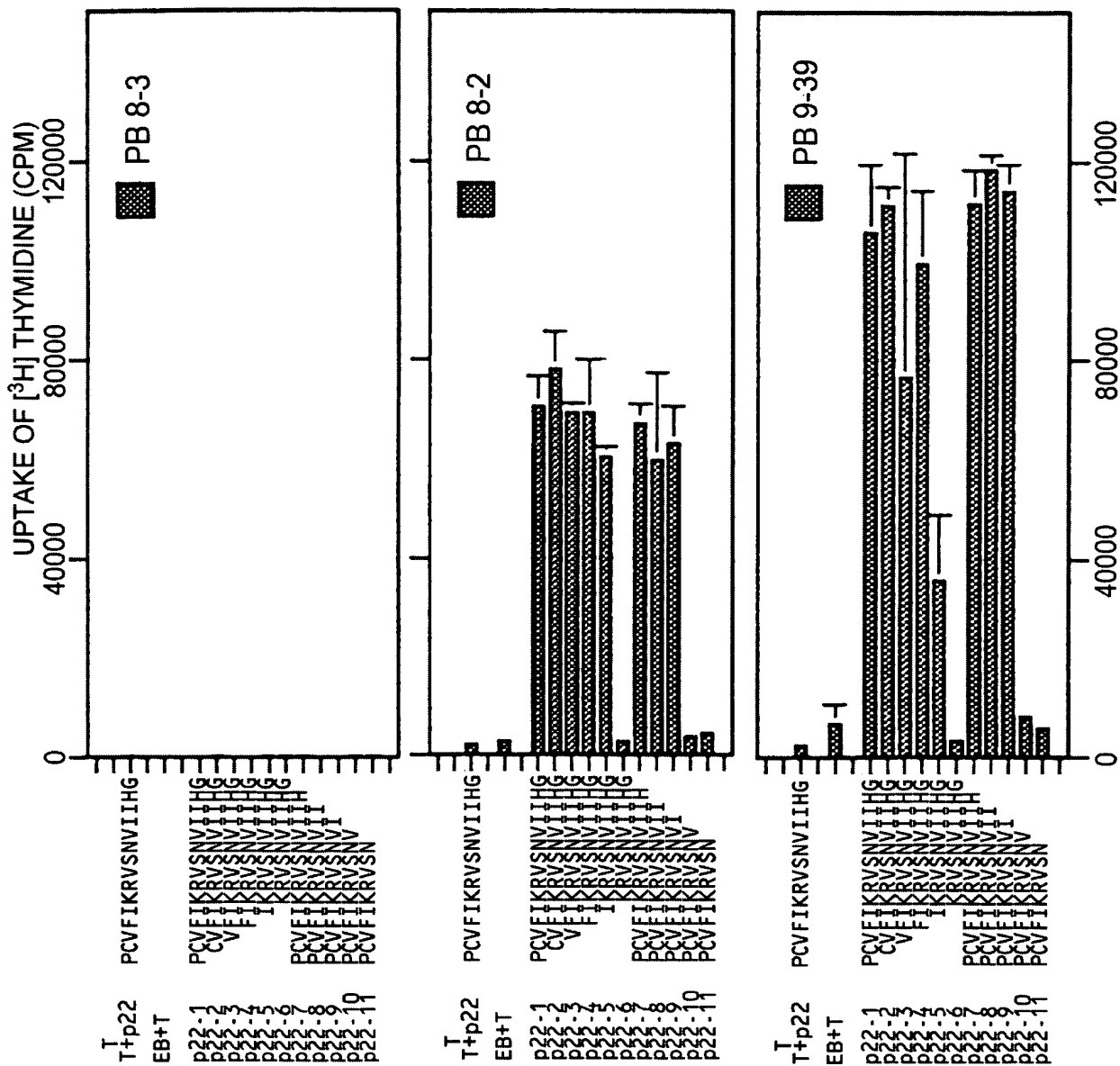


FIG. 15 (1)

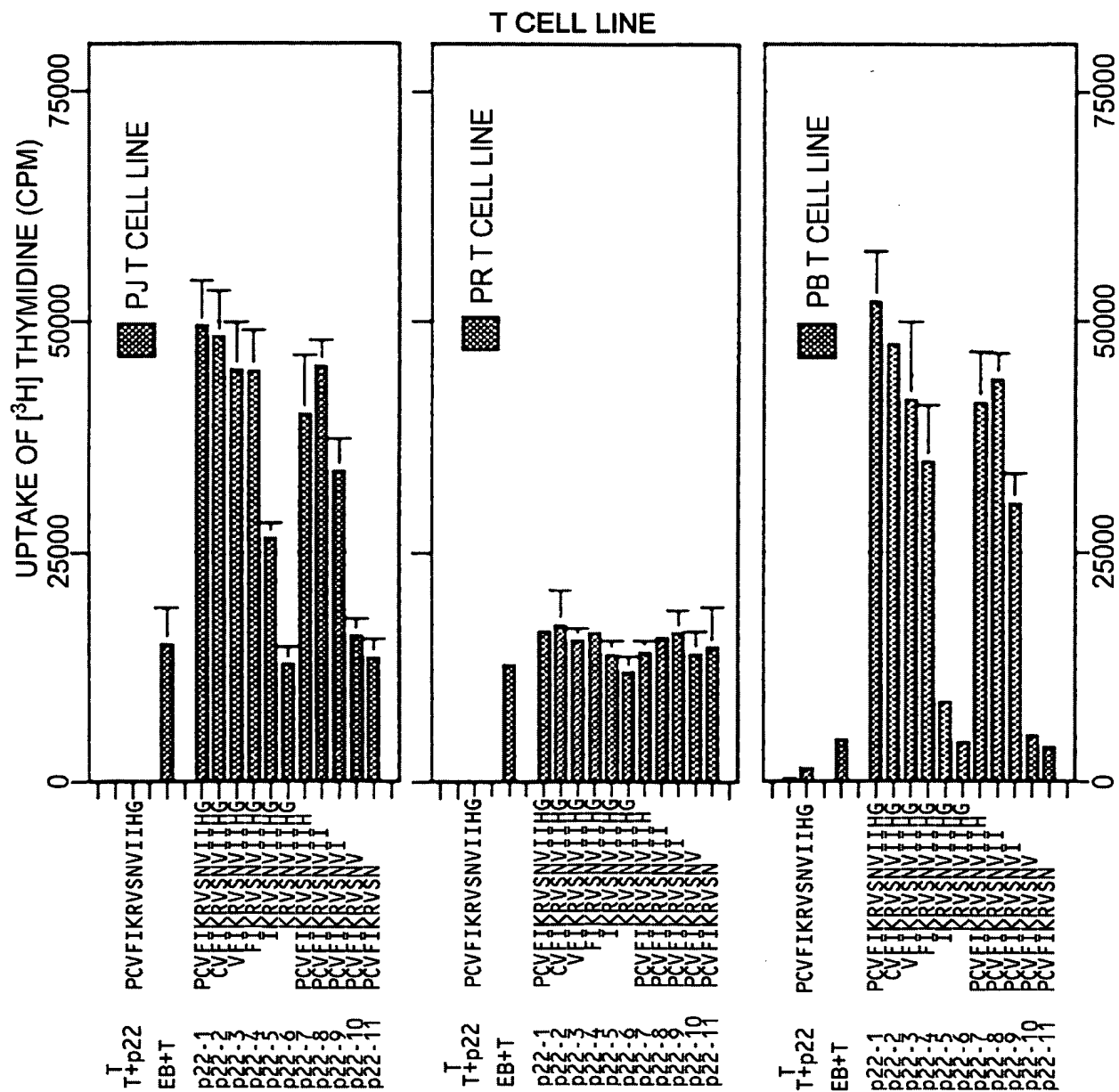


FIG. 15 (2)

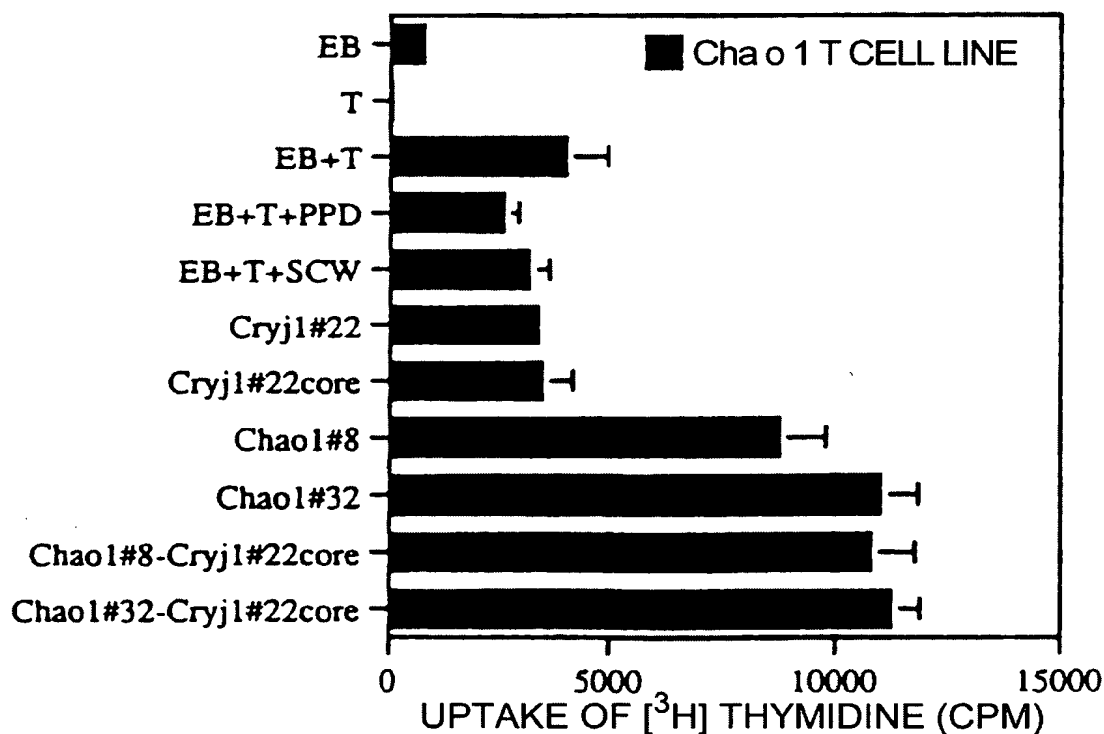
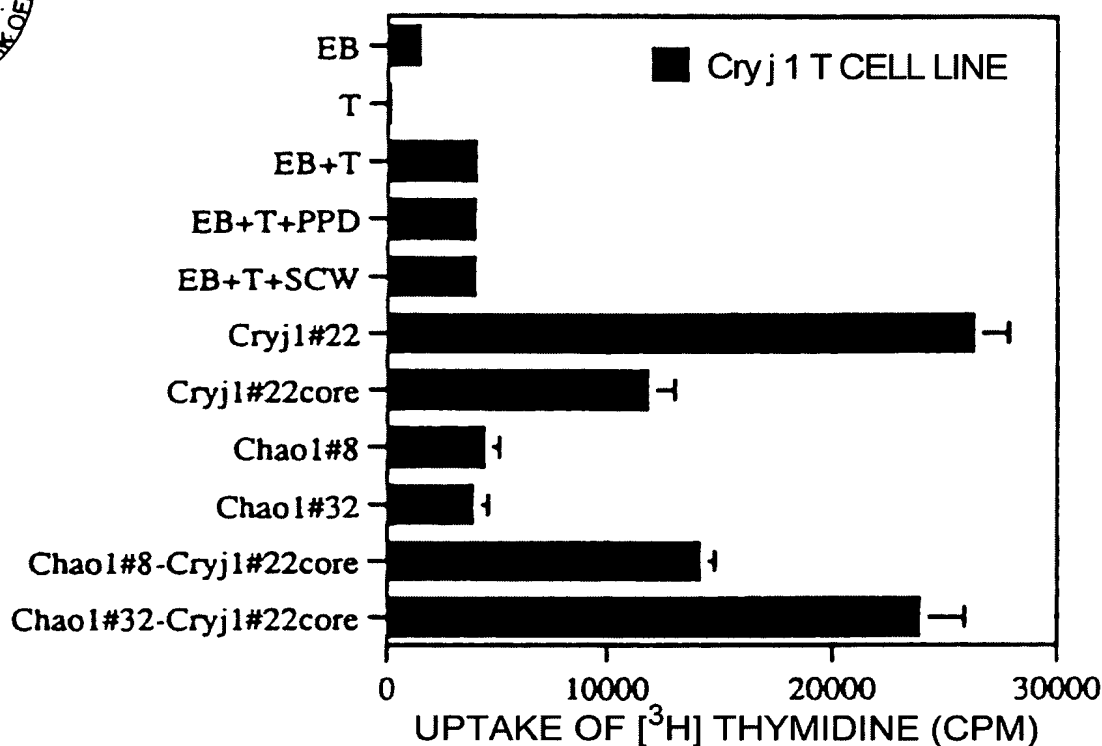


FIG. 16

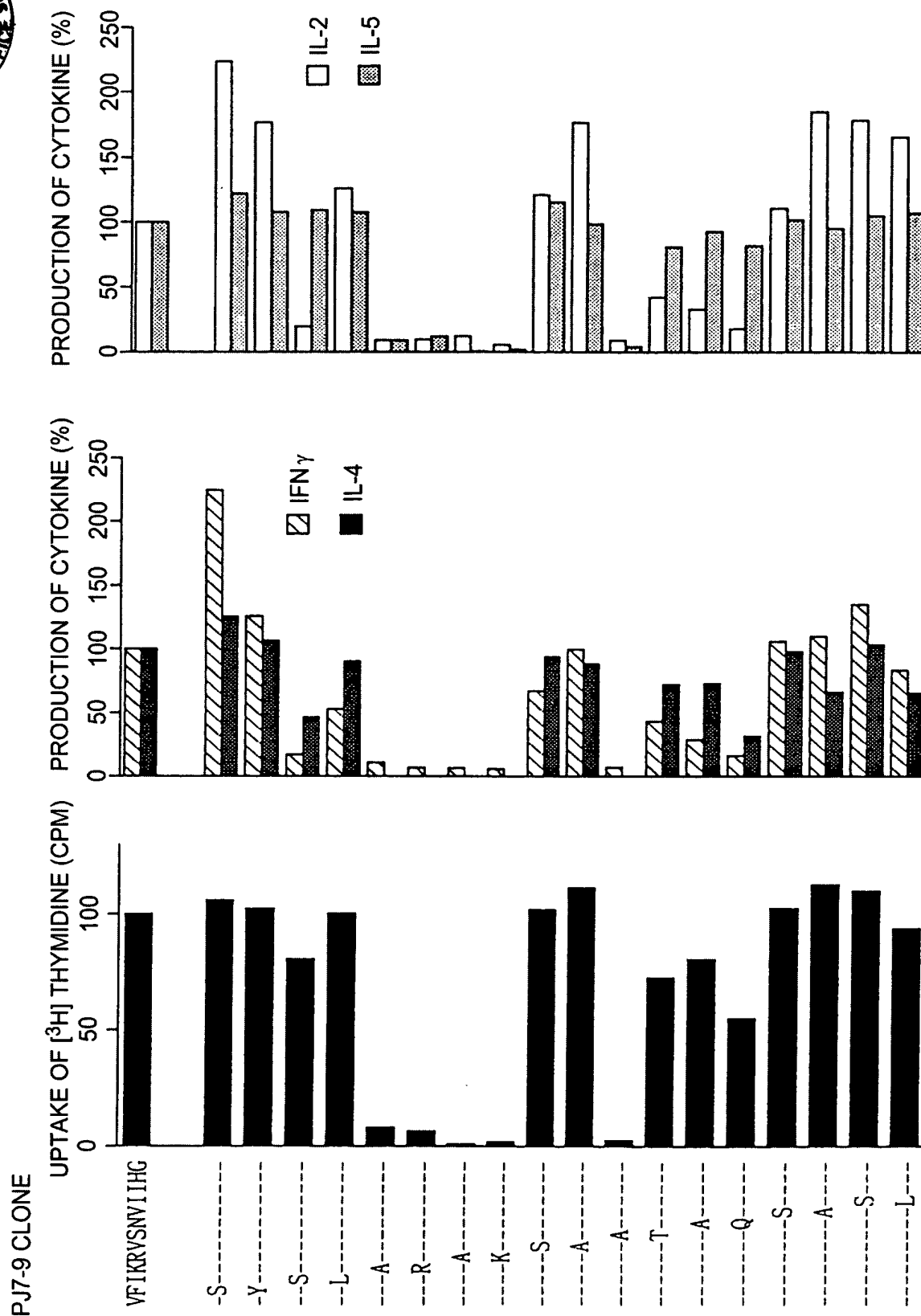


FIG. 17

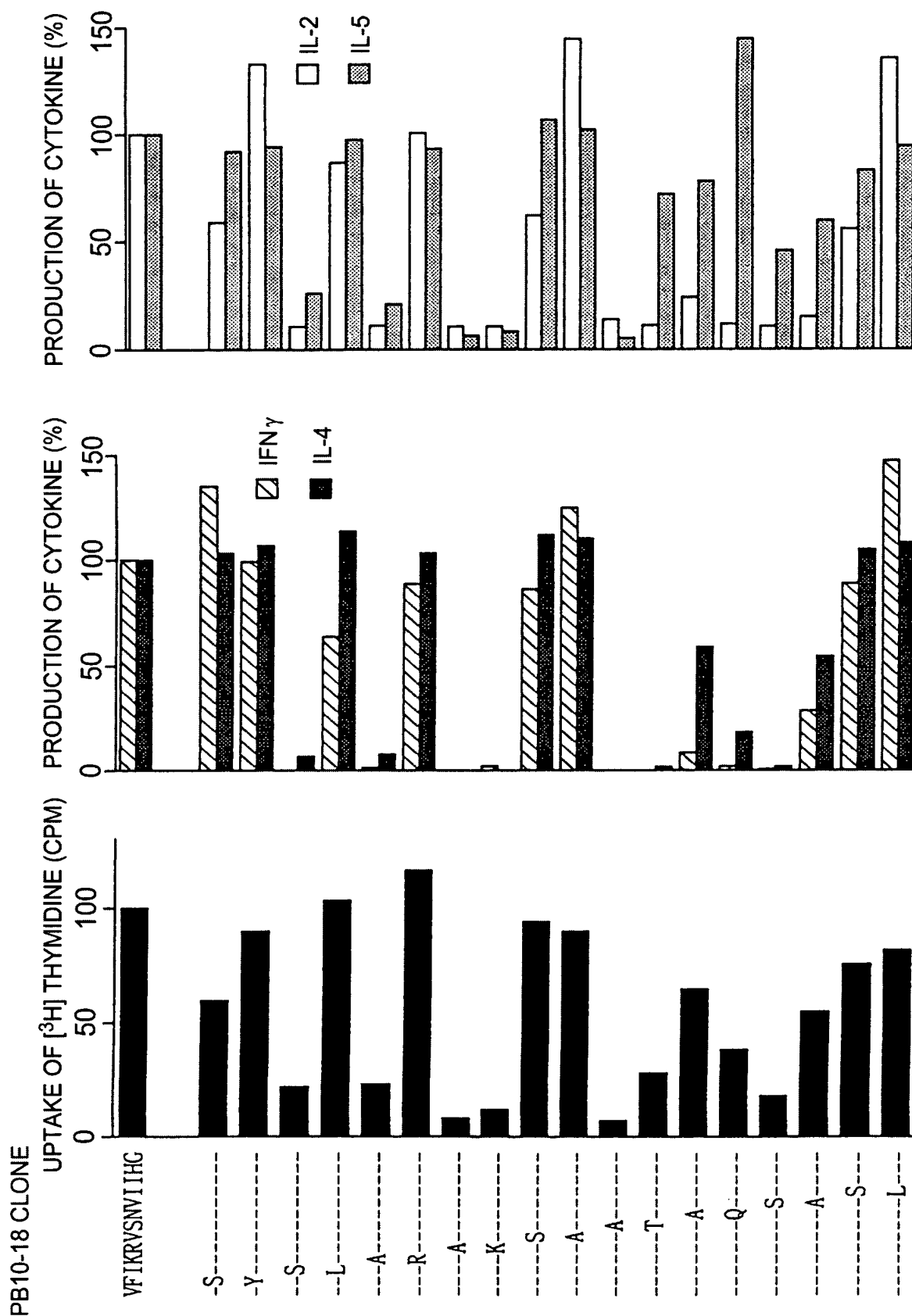
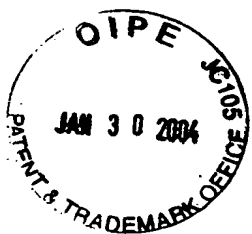


FIG. 18